IMPLEMENTATION OF GRADUAL IMPEDANCE GRADIENT TRANSMISSION LINE FOR OPTIMIZED MATCHING IN FIBER OPTIC TRANSMITTER LASER DRIVERS

Abstract

A transmitter in a fiber optic system is provided, including a driver circuit, a light emitting source, and transmission lines. The driver circuit is configured to receive a modulated electrical signal and to have a driver circuit output impedance. The light emitting source has a light emitter impedance that is different than the driver circuit output impedance. The light emitting source is configured to receive the modulated electrical signal such that it produces a modulated optical signal proportional to modulated electrical signal. The transmission lines are coupled between the driver circuit and the light emitting source for transmitting the modulated electrical signal from the driver circuit to the light emitting source. The transmission lines gradually change the impedance between the driver circuit and the light emitting source so as to gradually match the driver circuit output impedance to the light emitter impedance.